

Technical Datasheet

INEOS Composites

AROPOL™ M 105 TCR Low Styrene Emission Resin

AROPOL M 105 TCR is a thixotropic, pre-accelerated, orthophthalic acid based polyester resin with long geltime and low exotherm.

When applying AROPOL M 105 TCR resin, styrene emission is reduced by up to 50% compared to standard resins. Emission is only 2-5% of polyester resin used compared to 5-10% of standard polyester resin. Excellent glass fiber wet out properties and easiness of application is characteristic for AROPOL M 105 TCR.

Typical liquid resin properties

| Property at 23 °C | Typical value | Unit | Method |
|-----------------------------------|---------------|--------------------|-------------|
| Viscosity, Brookfield RV2, 10 rpm | 1400 | mPas | ISO 2555 |
| Viscosity, cone&plate | 180 | mPas | ISO 2884 |
| Styrene content | 41 | % | ASTM D 1644 |
| Density | 1,1 | kg/dm ³ | ISO 2811 |
| Geltime, 1% MEKP-50 | 60 | min | Hc-04a |
| Peak exotherm | 80 | °C | Hc-04a |

Typical cured resin properties

| Property (postcured 24h at 50 °C) | Value | Unit | Method |
|-----------------------------------|-------|------------|--------------|
| Tensile strength | 55 | MPa | ISO 527 |
| Tensile modulus | 3600 | MPa | ISO 527 |
| Elongation at break | 2,0 | % | ISO 527 |
| Flexural strength | 90 | MPa | ISO 178 |
| Flexural modulus | 4100 | MPa | ISO 178 |
| Heat deflection temperature (HDT) | 66 | °C | ISO 75/2 (A) |
| Hardness | 45 | Barcol | ASTM D2583 |
| Water absorption, 24 hours | 19 | mg/sample* | ISO 62-80 |
| Water absorption, 28 days | 92 | mg/sample* | ISO 62-80 |

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* 50x50x4 mm*

Application and use AROPOL M 105 TCR resin is suitable for spray-up, hand lay-up and filament winding methods for manufacturing numerous FRP products for the marine, building and construction and transportation markets.

Due to the long geltime and low peak exotherm AROPOL M 105 TCR resin can be used in building laminate thicknesses of 3-15 mm wet on wet.

Certificates and approvals AROPOL M 105 TCR resin is approved by Lloyd's Register and complies with the requirements of ISO 12215-1 standard for construction of small crafts.

The manufacturing, quality control and distribution of products, by INEOS Composites, are complying with one or more of the following programs or standards: ISO 9001, ISO 14001 and OHSAS 18001.

Additional information

| MEK peroxide influence on geltime | 1.0% MEKP | 1.25% MEKP | 1.5% MEKP |
|-----------------------------------|-----------|------------|-----------|
| M 105 TA | 20 min | 17 min | 14 min |
| M 105 TAR | 25 min | 20 min | 17 min |
| M 105 TB | 40 min | 32 min | 25 min |
| M 105 TBR | 45 min | 35 min | 28 min |
| M 105 TC | 60 min | 48 min | 38 min |
| M 105 TCR | 60 min | 48 min | 38 min |

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Handling and storage It is highly recommended that all material is stored at stable temperatures under 20°C preferably indoors, and away from direct sunlight. Prolonged storage outside of recommended conditions can influence liquid resin properties like viscosity and gel time. It is also strongly recommended to mix resin thoroughly before use. Shelf life of AROPOL M 105 TCR is six (6) months.

Notice All information presented herein is believed to be accurate and reliable, and is solely for the user's consideration, investigation and verification. The information is not to be taken as an express or implied representation or warranty for which INEOS Composites assumes legal responsibility. Any warranties, including warranties of merchantability, fitness for use or non-infringement of intellectual property rights of third parties, are herewith expressly excluded.

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INEOS Composites requests that the user reads, understands and complies with the information contained herein and the current Material Safety Data Sheet.